

REMARKS

1. Applicant acknowledges the Examiner's rejection of claims 1, 8, and 9 under 35 U.S.C. 102(b) as being anticipated by Oki (JP5-248496). Claims 1 and 9 are cancelled. Claims 4 and 6 now incorporate all the features of claim 1 as new independent claims. Claims 3, 7, and 8 are amended to depend from claim 4. Claim 10 is also amended to incorporate the feature of claim 4. Entry of this amendment is requested. In light of the amendments and the arguments presented below, withdrawal of all rejections and allowance of claims 3-8 & 9-14 is respectfully requested.

2. Applicant acknowledges the Examiner's rejection of claim 3 under 35 U.S.C. 103(a) as being unpatentable over Oki (JP5-248496), but respectfully disagrees.

In regard to claim 3, it should be allowable as now depending from claim 4. In addition, Applicant respectfully submits that the Examiner has merely stated a reason for making the foreign matter softer than the pulley taken right out of the specification (page 3 lines 8-10). This is a hallmark of impermissible hindsight reasoning based on Applicant's disclosure.

Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. MPEP § 2142 (emphasis added).

Furthermore, Oki teaches away from making pieces of foreign matter soft. Oki repeatedly calls his piece, "hard member 16" which are made "from glass, metal, etc." ([0009]). Both glass and metal are likely to scratch pulleys, but there is no suggestion or recognition by Oki that this could be a problem.

Moreover, the Applicant's use of soft material has a novel functional aspect which goes beyond the issue of not scratching pulleys. As described throughout the specification, the pieces of foreign matter which have variable width are intended to wear down as the belt surface is worn, thus exposing more and more surface area of

foreign matter as belt wear progresses (page 8, 13-18). This process makes the warning noise gradually increase.

In light of the amendments herein, the lack of evidence for obviousness, and the Applicant's novel, inventive use of the softer foreign matter of claim 3, withdrawal of this rejection is respectfully requested.

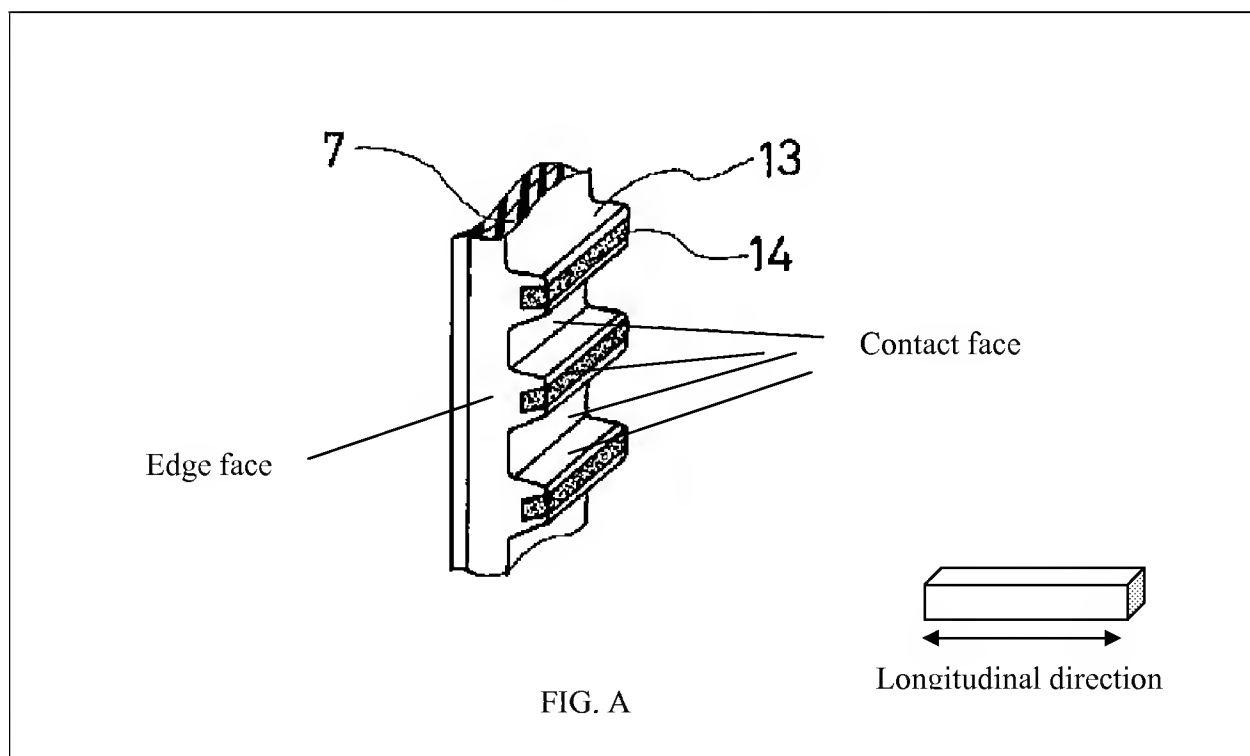
3. Applicant acknowledges the Examiner's rejection of claims 4, 5, 6, 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over Oki (JP5-248496), in view of Kazuhiko (JP9-256865), but respectfully disagrees.

In regard to all claims in this rejection, Applicant respectfully submits that the limitation "longitudinal direction of said foreign matter is substantially in the direction perpendicular to said contact face" is not taught or suggested by the Kazuhiko reference or by the cited combination of references, therefore a prima facie case of obvious is not properly made. Please consider carefully that all the underlined terms are clearly defined and unambiguous, in both the Applicant's specification and in Kazuhiko.

"Contact face" is defined in claim 1: "*a contact face contacting with a pulley when said transmission belt is wound around said pulley.*" This is understood by one of skill in the art to be the inside surface of the belt for any toothed belt. For the timing belt of Kazuhiko, the relevant contact face is clearly identified by Figures 1, 2, 15, & 16. Figs 1, 15 and 16 show the timing belt 7 wound around pulleys 4 and 5, so that the toothed surface on the inside of the belt is the "*contact face*." This toothed surface is shown in detail in Figure 2 (see FIG. A below). The contact face includes the various tooth 13 parts (tips and flanks) and the "land" surface in between the teeth, as pointed out in FIG. A below, as one of skill in the art would understand. The contact face does not include the two edge faces, one of which is pointed out in FIG. A below. As Kazuhiko puts it, "gear teeth in a medial surface of a belt, and embedding a metal body at a tip of this gear tooth" ([claim 3], emphasis added), and "a steel wire 14 is embedded in teeth 13 formed on an inner side surface of the timing belt 7" (Abstract, emphasis added).

Once the contact face is identified, the "*direction perpendicular*" to the contact face is obvious. Note that for a toothed contact face, the perpendicular direction depends on the location on the surface, whether on the land, flank, or tip, for example.

“*Longitudinal direction*” is unambiguously defined in the art as the lengthwise or longest direction of the three-dimensional solid represented as a “*piece of foreign matter*.” Dictionary definitions for longitudinal, length, and lengthwise are attached as Exhibit A. Kazuhiko discloses a “steel wire (metal body)” 14 (at [0011] & Fig. 2), which is mistakenly alleged by the Examiner to have a longitudinal direction perpendicular to the contact face of the belt. The metal body 14 clearly has a longest direction that is parallel to the tooth’s longest direction, and in fact, is laid in the tooth tip and extends across the belt width. As such, the longitudinal direction of metal body 14 can only be considered to be parallel to the contact face of the belt (see FIG. A below). Kazuhiko discloses no other orientation. The only surface the metal body is perpendicular to is the edge face, which is not the belt contact face. In fact, based on Kazuhiko’s disclosure, it would be impossible to orient his metal body 14 perpendicular to the belt’s contact face, because the belt is simply too thin in that direction. Thus, Kazuhiko utterly fails to teach that the “longitudinal direction of said foreign matter is substantially in the direction perpendicular to said contact face.”



In addition, there is no reason one of skill in the art would combine these two references or look to Kazuhiko to solve any problem with Oki. These two references

address two entirely different problems: Oki relates to belt wear while Kazuhiko to belt stretch. They use two different methods: Oki uses noise makers, while Kazuhiko uses magnetic proximity or displacement sensors. They are also uncombinable because laying the steel wire of Kazuhiko into the tooth tip of Oki would cause a noise from the first moment of use that would interfere with noise generated after wear and render Oki's method useless for its stated purpose.

The Examiner's stated reason for supposing one of skill in the art would combine "a longitudinal direction *as taught by Kazuhiko* ... to maximize the warning sound at the time of contact" is actually correct, but only because Kazuhiko teaches the long direction of the metal wire is parallel to the contact face. This is a way to maximize contact noise, but this is not the way claimed by the Applicant! The Applicant's orientation, perpendicular to the contact face, does not in itself maximize the warning sound. On the contrary, the specification explains the progressively increasing noise of the Applicant's design, "the warning sound becomes louder as the contact face 18a becomes more worn" (page 8 lines 16-18) or as more pieces become exposed (page 10, lines 19-22).

Withdrawal of the rejection of claims 4, 5, 6, 13, and 14 is therefore respectfully requested.

As for claim 5, 13 and 14, the Examiner states that the claim limitation "*a cross section of variable width...*" would have been obvious, because "MPEP section 2144.04 IV. [sic] B. states that the configuration of the claimed part is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed part was significant." The Applicant respectfully submits that the claim limitation "*a cross section of variable width...*" is significant. The specification explains the progressively increasing noise of the Applicant's variable-cross-section design, "the warning sound becomes louder as the contact face 18a becomes more worn" (page 8 lines 16-18). This is a new, nonobvious result showing insight and invention, not disclosed or suggested by any of the references cited individually or in combination. Thus, the limitation does not represent a

“mere” shape change. The Board has recently commented on the quote relied on by the Examiner:

“The Examiner relied on *In re Dailey*, 357 F.2d 669 (CCPA 1966) in concluding that “it would have been obvious to change the shape of the opening depending on wind conditions so ... that the body would appear more life-like by compressing the top of the body to widen the opening for the wind to blow in” (Ans. 9).

While it might be the case, as in *Dailey*, that a rearrangement of existing or known parts would have been obvious where it does not produce a different function or any new or unexpected results, in the present case, claims 15 and 27 are directed to more than just a rearrangement of existing parts. *Ex Parte Bocchi*, 2008 WL 5583425 (BPAI 2008) (emphasis added).

In this case, the Applicant’s shape limitation clearly produces a different function. Instead of a constant noise, which a user might grow accustomed to and ignore, the variable cross section design produces a progressively increasing noise, more likely to produce the desired warning effect. Also, due to this the extent of the belt wear can be determined by the user (page 3 lines 14-15). Thus, the rejection of claims 5, 13, and 14 should be withdrawn.

As for claim 6, the Examiner’s interpretation of the claim language and the Oki reference is in clear error. Nevertheless, claim 6 is currently amended to more clearly define the amendment by clarifying that each “*distance*” is “*in the perpendicular direction*” between said contact face and the top of a piece of foreign matter. Antecedent basis is in the spec and claims (see e.g., page 3 line 12, Fig. 3, claim 6, etc.) and from general scientific knowledge as argued below.

The Examiner’s Fig. A shows a 1st distance and a 2nd distance, but these are not properly drawn. The claim recites “*a distance between said contact face and the top of at least one piece of said foreign matter...*” This is clearly referring to a distance between a point (“*the top*”) and a surface (“*the contact face*”). Such a distance is well-known in the art to be the closest perpendicular distance between the point and the surface, while the Examiner has made it an arbitrary distance, namely the distances from two pieces to one arbitrary point on the surface. See attached Exhibits B, C and D defining distance as perpendicular and/or the shortest path, from representative technical handbooks and dictionaries. Properly interpreted, Oki teaches “hard member

16” are all the same “prescribed depth d” from the contact face, which is illustrated as the closest perpendicular distance (See Oki’s Fig. 2 and [0009]). The Applicant’s distance to the surface is clearly also the perpendicular distance to the nearest part of the contact face (see e.g., Fig. 3). Oki does not disclose two pieces of foreign matter, one with a distance “*different from a distance*” of another. Therefore, this is an additional reason that a prima facie case of obviousness for claim 6 has not been made.

Withdrawal of the rejection of claim 6 is therefore respectfully requested.

4. Applicant acknowledges that claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Oki, in view of Cicognani (GB 2046399), but respectfully traverses. All the arguments regarding claim 4 (from which claim 7 now depends) above apply again here and are incorporated by reference. Moreover, the colored material of Cicognani is not “*foreign matter*.” Instead, Cicognani takes a known rubber material in a known belt construction and simply makes it white instead of black by using known white fillers instead of carbon black (col 1, lines 16-18 & col 2, lines 1-13). This does not constitute “*foreign matter*” according to the present invention, “wherein said foreign matter is given a color, which is different from a color of other parts of said transmission belt.” (page 3 lines 23-24). Withdrawal of the rejection of claim 7 is therefore respectfully requested.

5. Applicant acknowledges that claims 10-12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Oki, in view of Mohr et al. (6,672,983), but respectfully traverses in light of the current amendments and the above arguments with respect to claim 4, which are incorporated here by reference. Moreover, Mohr et al. do not teach or suggest “*a warning apparatus which sends out a warning according to said specific sound detected*.” Mohr et al. merely use a microphone and meter to measure sound level at a particular frequency and a total sound level, in order to select quieter belt designs. There is no disclosure in Mohr et al. of “*a warning apparatus*.” Mohr et al. do not teach or suggest using a sound apparatus to “*send out a warning according to the specific sound detected*” (col. 4, lines 13-15). Therefore, withdrawal of the rejection of claim 10 is respectfully requested.

FEE STATEMENT

Any fees which may be required, though none are believed due, are authorized to be charged to Assignee's deposit account number 07-0475.

In light of the forgoing amendments and remarks, favorable reconsideration of the allowability of all claims is respectfully solicited.

Respectfully submitted,

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